

WHAT IS CLAIMED IS:

1. A high-frequency reactor comprising a powder core and a winding wound around said powder core, said powder core being obtained by compaction-forming magnetic powder, wherein said magnetic powder is an alloy comprising 1-10 wt% Si, 0.1-1.0 wt% O, and balance Fe, an insulator comprising  $\text{SiO}_2$  and  $\text{MgO}$  as main components being interposed between magnetic powder particles having a particle size of 150  $\mu\text{m}$  or less.

2. The high-frequency reactor according to claim 1, wherein said powder core has an a.c. permeability  $\mu_{20\text{kHz}}$  of 20 or more under an applied d.c. magnetic field of 12000 A/m and a core loss of 1000kW/m<sup>3</sup> or less under the condition of 20 kHz and 0.1 T.

3. The high-frequency reactor according to claim 1, wherein a gap or a nonmagnetic substance arranged at one or more positions occupies 10% or less of a magnetic path length.

4. A high-frequency reactor comprising a powder core according to claim 1 and a winding wound around said powder core.